



GDACC

*New Mexico Geospatial Data Acquisition
Coordination Committee*

SPATIAL DATA ACQUISITION State of New Mexico

BRIEFING MATERIAL

October 2003

Governor Bill Richardson



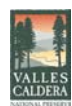
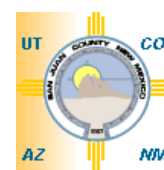
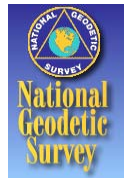
**Welcome
to RGIS**



regional development corporation



**Welcome to
NMGIC**





State of New Mexico

Office of the Governor

Bill Richardson
Governor

EXECUTIVE ORDER NO. 2003-018

CREATING THE NEW MEXICO GEOSPATIAL DATA ACQUISITION COORDINATION COMMITTEE

WHEREAS, the Information Technology Commission, pursuant to its authority under NMSA 1978, Section 15-C1-5, utilizes the Geographic Information System Advisory Committee (GISAC) as a standing committee of the Commission to guide development and use of geographic information technology in New Mexico for State government agencies; and

WHEREAS, an increased demand exists for accurate and timely geospatial data by State and local governmental agencies to provide information to support appropriate management and decision making; and

WHEREAS, the coordination of geospatial data acquisitions among State agencies would reduce duplication of effort and data while decreasing costs; and

WHEREAS, the special acquisition of geospatial data requires increased interaction with local, state, regional and national cooperative programs; and

WHEREAS, State legislators and New Mexico's Congressional delegation should be informed of the mapping needs of the State of New Mexico and so that they may support efforts to meet the State's needs.

NOW THEREFORE, I, Bill Richardson, Governor of the State of New Mexico, by virtue of the authority vested in this office by the Constitution and Laws of New Mexico, hereby establish the Geospatial Data Acquisition Coordination Committee of the Information Technology Commission for the purpose of assessing and coordinating geospatial data acquisition for State agencies in New Mexico. The responsibilities and authority of the Committee are to:

1. Coordinate with GISAC, the Resource Geographic Information System (RGIS) Program and the New Mexico Geographic Information Council (NMGIC);
2. Coordinate and leverage funding requests and projects for acquiring geospatial data for the State of New Mexico;
3. Assess, prioritize, and request acquisition of geospatial data for the State of New Mexico;
4. Identify funding sources for acquiring geospatial data;

5. Generate data acquisition scopes of work for RFI's and RFP's;
6. Represent New Mexico's mapping priorities and requirements at federal and state levels; and
7. Seek the support of New Mexico's Congressional delegation regarding the State's geospatial data needs.

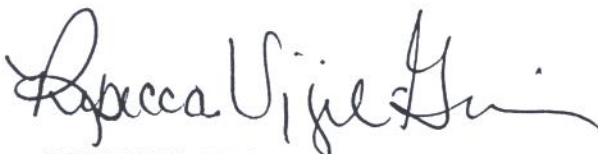
The Committee shall be appointed by the Governor and shall include:

1. The GISAC Chair or designee;
2. One member from GISAC representing state government;
3. One member from GISAC representing local government;
4. One representative from NMGIC;
5. The RGIS Program Director or designee; and
6. One at-large member from the geospatial data community.

In addition, the Governor shall appoint two non-voting advisory members from outside state government.

THIS ORDER supersedes any other previous orders, proclamations, or directives in conflict. This Executive Order shall take effect immediately and shall remain in effect until such time as it is rescinded by the Governor.

ATTEST:



REBECCA VIGIL-GIRON
SECRETARY OF STATE



EXECUTIVE ORDER NO. 2003-018
Page 2 of 2

DONE AT THE EXECUTIVE OFFICE
THIS 27th DAY OF MAY, 2003

WITNESS MY HAND AND THE GREAT
SEAL OF THE STATE OF NEW MEXICO



BILL RICHARDSON
GOVERNOR



*New Mexico Geospatial Data Acquisition
Coordination Committee*

*Chief Information Office
Santa Fe*

Voice: (505) 476-0400

Technical Contacts: Mike Inglis (RGIS/UNM- 505.277.3622) and Gar Clarke (OSE/ISC – 827-6192)

*404 Montezuma Avenue
New Mexico 87501*

Fax: (505) 476-0401

PROJECT STATEMENT

June 2003

Title: *Statewide GIS Data Acquisition and Distribution*

Funding: Primary – *Federal funding*

Process: Coordinate state and federal data requirements and identify funding mechanisms towards the acquisition of statewide geographic data for NM. Primary geographic data acquisitions include aerial imagery and conversion of that imagery into DOQ (Digital Orthoquads).

Data Acquisition: The NM GISAC Statewide Data Acquisition and Distribution Working Group (SDADWG) have met several times and agreed that three primary data types are required to meet agency strategic goals. These data in order of priority include 1) aerial imagery (color infrared/natural color) converted into DOQs, 2) cadastral or property mapping, and 3) topography using Light Detection and Ranging (LIDAR) or similar technologies to provide contours, slope, and aspect. The aerial imagery and DOQ production is essential for agency needs and is a solid statewide acquisition product. However, the topography and cadastral may be more economically generated in selected areas.

Cost Estimates: The following numbers are gross estimates for aerial imagery and conversion into DOQ for the entire State of New Mexico. The specifications include a imagery resolution of one meter with accuracies within 2 meters

Aerial Imagery: \$1-2 million

DOQQ Conversion: \$2-3 million

Data Distribution: Of equal importance is the acquisition of funding to support the distribution of these large datasets through the enhancement of our State Resource Geographic Information System Data Clearinghouse (RGIS). Elements include data storage expansion, network upgrade, system integration, application development, support, and security. Of special interest is the integration of Geographic Information Technology (GIT) into a web based enterprise system.

Data Distribution: \$250-300 thousand



Participants: Currently, the project has the support of State, Local, and Federal governances with active support from the *Information Technology Commission, Office of the State Engineer, Environment Department, State Lands Office, Highway and Transportation, Energy Mineral & Natural Resources, Game and Fish, Geology and Mineral Resources, Historic Preservation, County of Bernalillo, City of Albuquerque, County of Santa Fe, City of Santa Fe, Bureau of Land Management, U.S. Forest Service, U.S. Geological Survey, Army Corp of Engineers, New Mexico Association of Counties, New Mexico Municipal League, Northern New Mexico Development Corporation, Water Resources Research Institute, and the N.M. Geographic Information Council.*

Justification: The SDADWG surveyed agencies by asking what use these data would provide them. The following responses are not in order of priority:

- Identify irrigated lands to support water depletion studies
- Provide the basis for updating the FEMA Flood Insurance Rate Maps (FIRM)
- Support fire prevention and suppression efforts
- Project determination assessment for road corridor proposals
- Base mapping for roads, drainage, vegetation, land use, land cover, etc.
- Reconcile water rights information with mapped features
- Provide fuel data to support watershed management practices
- Support property mapping requirements for county assessments
- Locate water source features as inputs to potential contaminant transport analyses
- Enhance surface runoff models supporting erosion and water delivery analyses
- Support existing tribal assistance programs targeting water resource development
- Expand geologic stratigraphic mapping efforts
- Property assessment verification for structures and infrastructure
- Define drainage changes and erosion processes
- Identify and assess archeological sites for input to a predictive model
- Correct locations of remote air emissions permits, well pads, and access routes
- Determine the extent of contamination areas
- Assess grazing, drainage stabilization, riparian vegetation vigor, and BMP
- Identify areas of illegal dumping and correlate with water quality threats
- Assist in stream channel restoration efforts
- Determine trespassing and land encroachment violations on public lands
- Base mapping to support public land assessment of leases and right of way
- Evaluate riparian areas with historical data for change determination
- Detection of invasive or nuisance vegetation
- Ownership mapping to support state lands automated leasing requirements
- Basic geologic mapping support for a current statewide project
- Habitat mapping for critical species
- Assistance in developing a habitat predictive model for certain species
- Identify areas for system restoration efforts or habitat enhancement for big game
- Base map support to delineate acequias and other water conveyances
- Provide currency data to calibrate a model for identifying archeological sites

GDACC: The Geospatial Data Acquisition Coordination Committee (GDACC) was created by Governor Bill Richardson with Executive Order No. 2003-018. The responsibilities and authority of the GDACC are to coordinate and leverage funding requests and projects requiring geospatial data for the State of New Mexico. In doing so the committee must incorporate the needs of professional organizations to assess, prioritize, and generate scopes of work for data acquisition services. In addition, the GDACC will identify potential funding sources, represent



PROJECT FUNDING REQUEST

March 13, 2003

Project Name: Statewide Digital Orthophotography Project

Name of Organization: State of New Mexico

Project Purpose:

The importance of acquiring digital orthophotography for the State of New Mexico is to address critical issues in the areas of water, emergency management, infrastructure evaluation, environmental abatement, and economic development. Although there is a great interest by local government, federal and other agencies, the acquisition of these data come at a crucial time for managing New Mexico's water crisis. The state is experiencing drought conditions and facing a potential under delivery of water to Texas. In response, the Office of the State Engineer/Interstate Stream Commission (OSE/ISC) have committed substantial resources to modernize business functions within the agency. This effort is providing accurate and sophisticated administrative tools to manage the state's water resources. As a result, the acquisition of digital color infrared imagery is a crucial next step to effectively measure and manage our water.

The Office of the State Engineer is required to protect and manage the water resources to provide a sound basis for economic growth. The State must use data and models to increase knowledge of the ground and surface waters. Accurate accounting for, and monitoring of, water depletion is essential to managing water to meet New Mexico's current and future uses.

Digital color infrared imagery will assist the OSE in (1) determining the extent of irrigated acreage for a specific parcel of land; (2) checking for irrigation occurring on lands without water rights; (3) provide a valuable tool to assist in the review of water right applications; and (4) support the hydrographic surveys necessary in the adjudication of water rights.

Funding request: \$4,500,000

Digital data acquisition \$4,220,000

Data Distribution \$280,000

Points of Contact:

GISAC Statewide Data Acquisition Working Group

Mike Inglis, RGIS Program, University of New Mexico (505) 277-3622

Gar Clarke, Office of State Engineer (505) 827-6192



*New Mexico Geospatial Data Acquisition
Coordination Committee*

FUNDING REQUEST: Item Estimates

Project Name: Statewide Digital Orthophotography Project

Name of Organization: State of New Mexico

Funding request: \$4,500,000

Digital data acquisition \$4,220,000

Data Distribution \$280,000

Funding source: Federal Appropriation

Digital data acquisition

Quote received November 5, 2002 from National Imaging and Mapping Agency (NIMA) for color infrared digital orthophotography.

Aerial Photography	36000 LM	included within the ortho price quote
GPS control	120 GCP's	\$120,000
Orthorectification	8,136 DOQQs	\$3,255,000
QA-Management	25.00%	<u>\$845,000</u>
Total cost for statewide acquisition		\$4,220,000

Data Distribution

Quote received March 6, 2003 from Resource Geographic Information System (RGIS) Program for storage, archiving, data delivery and distribution of the color infrared digital orthophotography.

Administration	\$25,000
Data packaging and preparation including metadata	\$80,000
Data archiving and Web delivery of data	<u>\$175,000</u>
Total cost for archiving and distribution	\$280,000



Coordination Committee



WATER RIGHTS
New Mexico Office of the State Engineer
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery

The mission of the Office of the State Engineer is to protect and manage the water resources of New Mexico for beneficial uses by its people, in accordance with law. To establish a sound basis for growth, the State must use data and models to increase our knowledge of the groundwater under our feet and the surface water flowing in our streams. Accurate accounting for and monitoring of water depletions is essential to managing water to meet New Mexico's current and future uses. The Water Rights Unit, a part of the Office of the State Engineer, has the primary purpose of providing for the administration of the available surface and of the state.

The Water Rights Unit currently uses a variety of forms - to review the irrigation specific parcel of land. The land under on all available imagery, including photography, to review the history of the review of the historical irrigation is more of the state that have good spatial data variety of time periods. Staff members also use imagery data in their memos of recommendation to support their analysis. Imagery is also commonly used in the Water Rights Unit for GIS work.



efficient
underground waters

imagery - in a
occurring on a
review is checked
DOQQs and aerial
irrigation. A
accurate in parts
available over a

Color IR imagery would assist the Water Rights Unit in determining the extent of irrigated acreage for a specific parcel of land. For a more general area of interest, the ability to estimate the amount of land under irrigation would provide a method to compare the amount of "paper" water rights in an area to the estimated amount of water actually being diverted. Color IR imagery would also assist the Water Rights Unit in checking for irrigation occurring on lands without a water right.

Having a relevant statewide imagery set would provide a valuable tool to assist in the review of water right applications by providing data for areas where imagery data is currently limited or unavailable. Color IR imagery data would be used in public outreach and be incorporated into GIS applications that are being developed by the Office of the State Engineer. The GIS applications are being developed to facilitate the use and distribution of spatial data throughout the Office of the State Engineer and to the general public (through the OSE website).



Coordination Committee



HYDROLOGY

New Mexico Office of the State Engineer

Statewide Spatial Data Acquisition Requirement

Color Infrared Aerial Imagery

The Hydrology Bureau has a staff of 14 and performs a wide range of activities in support of the Water Resource Allocation, Interstate Compact Compliance, and Water Rights Protection programs. General activities include:

- Development of water resource models and administrative policies;
- Assessment of well impacts
- Evaluation of water availability
- Technical and research project design and management
- Management of the agency library

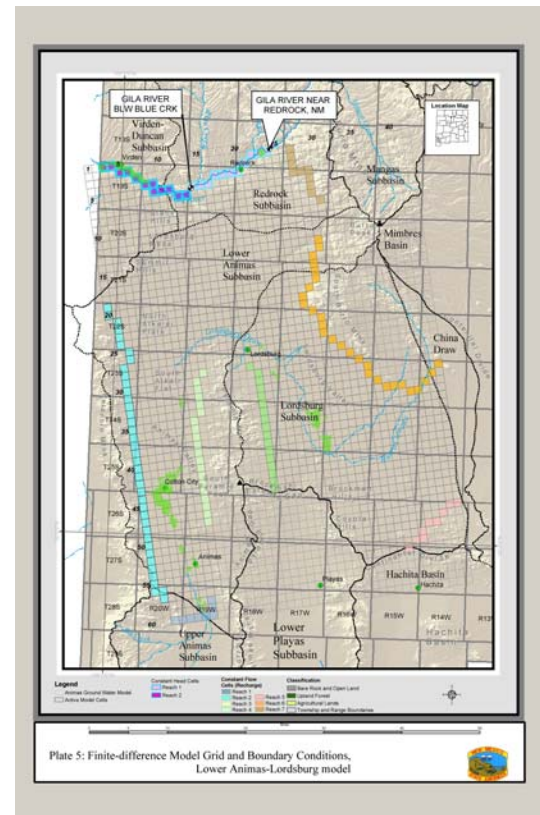
The acquisition of Color Infra Red (CIR) Digital Ortho Quarter Quadrangle (DOQQ) data will assist the hydrology bureau with first three tasks above.

Availability of 1 meter CIR DOQQ data would provide a base produce inventories of irrigable lands. These inventories are used in Groundwater modeling to estimate Consumptive Irrigation Requirements (CIRs), pumping locations and irrigation return flow for each cell.

Current CIR DOQQ data will provide the data updates to enable hydrologists to better determine existing uses. Water in areas that pump ground-water for irrigation can be quantified with the use of the DOQQ data. If we determine what the historical pattern of use has been, we can predict future water needs and aquifer depletions.

Updates of DOQQ data provide our office with an effective tracking tool so that we may estimate the amount of water has been pumped from a basin in order to manage permitting and critical basin areas. Critical management areas are designated when we can determine that groundwater supplies cannot sustain a forty year supply at current permitted use.

CIR DOQQ data may also be used by bureau hydrologists in evaluations of water availability and other water resources assessments. Specific potential applications include identifying and mapping groundwater recharge and discharge areas, estimating evapotranspiration by phreatophytes and other water budget components, and assessing fractured rock aquifers through fracture trace analysis.



the
to
use



Coordination Committee



HYDROGRAPHIC SURVEY

New Mexico Office of the State Engineer

Statewide Spatial Data Acquisition Requirement

Color Aerial Imagery

The Hydrographic Survey Bureau of the Office of the State Engineer (OSE) conducts hydrographic surveys of water use within the State of New Mexico. These surveys are the technical basis for the adjudication of water rights and produce a quality map with an associated database of water use features. The hydrographic survey has evolved an advanced digital GIS-mapping environment.

As a part of that mapping process, digital orthophotography is the required mapping base. Accurate digital orthophotography allows the Hydrographic Survey Bureau to delineate and map irrigated parcels directly from the imagery. These maps are presented to the public and the court to assist in providing informative decisions. Using digital orthophotography allows OSE to integrate a wide variety of data including field inspections, GPS (Geo Positioning System) locations, and ownership data from deeds, plats and county assessor files. In addition, scanned and georeferenced maps from a variety of sources are integrated using digital orthophotography as a framework. The use of Color Infrared (CIR) Photography in the production of the digital orthophotographs introduces a very important property in the identification and mapping of irrigated lands and crop patterns.

Currently, the Hydrographic Survey Bureau is working in the Chama River Basin, the Lower Rio Grande Basin, lower Pecos River Basin, the Upper Rio Grande Basin, and the San Juan Basin. Completing the hydrographic surveys and adjudications for the entire state is crucial to the State of New Mexico's ability to effectively manage its water resources.

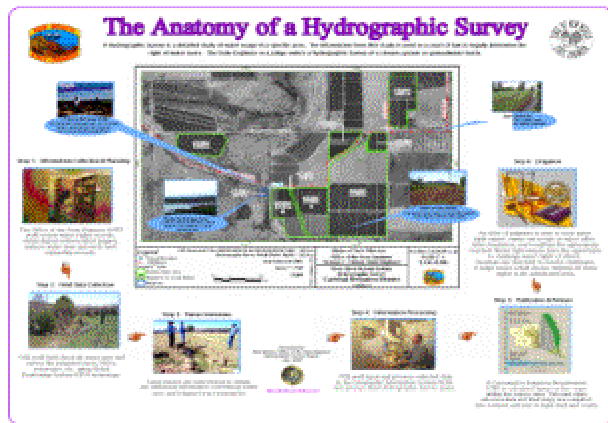
Our data encompasses aerial photography, airborne digital imagery, satellite imagery, DEMs, and DRGs among others. Data sources include a variety of federal, state and private acquisitions.



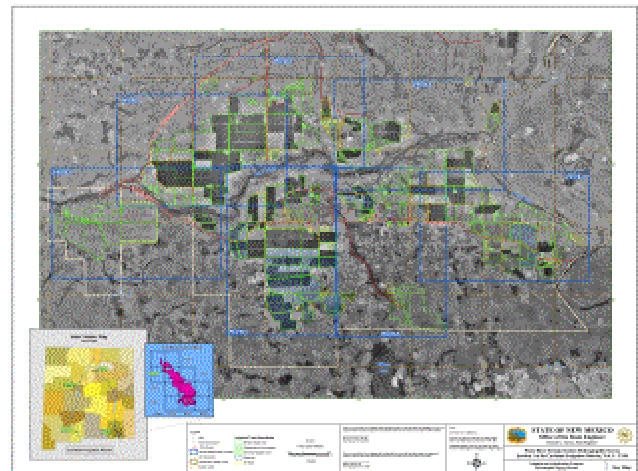
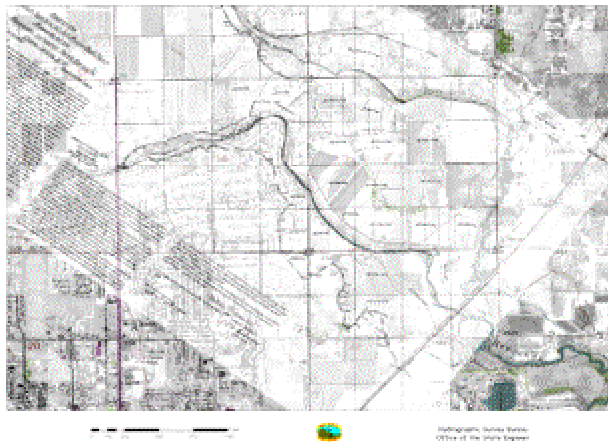
into



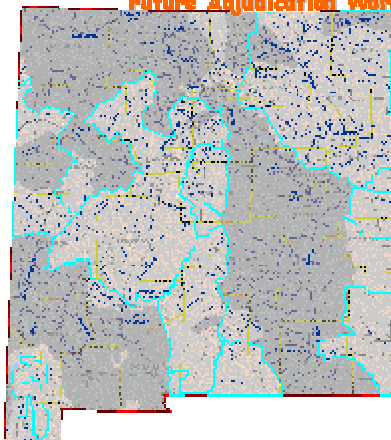
New Mexico Geospatial Data Acquisition Coordination Committee



Middle Berrendo Stream
Milne-Bush Ranch Area

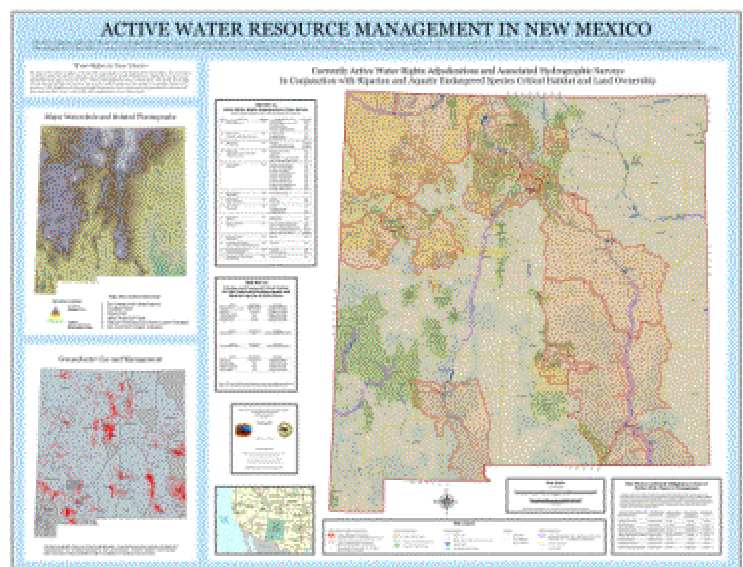


Future Adjudication Work



Areas of Future Work

- > Canadian River Basin
- > Eastern Plains
- > Mance & Salt Basins
- > Colorado Basin
- > Estancia Basin
- > Middle Rio Grande Basin
- > West Nueces Basin
- > Galop Basin



GDACC: The Geospatial Data Acquisition Coordination Committee (GDACC) was created by Governor Bill Richardson with Executive Order No. 2003-018. The responsibilities and authority of the GDACC are to coordinate and leverage funding requests and projects requiring geospatial data for the State of New Mexico. In doing so the committee must incorporate the needs of professional organizations to assess, prioritize, and generate scopes of work for data acquisition services. In addition, the GDACC will identify potential funding sources, represent New Mexico mapping priorities and requirements at federal and state levels, and seek the support of New Mexico's Congressional delegation regarding the state's geospatial data needs.



Coordination Committee



PROPERTY TAX DIVISION
GIS/Mapping Section, State Taxation and Revenue Department
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery

The Property Tax Division (PTD) of the Taxation and Revenue Department promotes fair and equitable assessments through the administration of the Property Tax Code and provides a high level of customer service to taxpayers, county, and state officials.

The goals of the Property Tax Division are to create a seamless statewide parcel dataset; ensure the use of an accurate and complete Uniform Property Code (UPC); set geographic information system (GIS) standards for cadastral applications for county assessor's mapping staff; provide coordination between agencies interested in the NM cadastral data; and provide technical support to the assessor's mapping staff.



The County Assessor's cadastral map is the foundation of the assessor's record system. The assessors' parcel data in a GIS layer ensures that all property has been identified and appraised, thereby increasing the tax base. The use of a GIS in the assessor's office assists the analysis of property data, greatly increases efficiencies, encourages communication, enhances data sharing, reduces errors, and limits duplication of efforts.

In New Mexico each county Assessor's Office is required to submit their digital parcel maps and property database to the Property Tax Division on an annual basis. The GIS/Mapping Section of PTD is responsible for combining the Assessor's parcel data to create a seamless, statewide parcel layer. By linking the property databases, the GIS/Mapping Section can map statewide tax "neighborhoods," tax districts, land-use, and assessment maps. Analyzing the data will ensure fair and equitable tax assessments on a statewide basis. The data will also be used for emergency management, resource management and economic development purposes.

Acquisition of statewide Digital Ortho Imagery Quadrangles (DOQs) will support the assessor's and the GIS/Mapping Section's property-mapping requirements and property assessment verification. Statewide color infrared DOQ's will assist the assessor's in locating and assessing agricultural lands. Statewide DOQs will provide a common base map that can be used for georeferencing the assessor's property maps and locating improvements. The GIS/Mapping Section requires the statewide 1-meter accurate DOQs for edge matching individual county parcel maps together into a seamless statewide parcel map. The Taxation and Revenue Department Property Tax Division GIS/Mapping Section strongly supports the acquisition of the 1-meter color infrared/natural color DOQs.



Coordination Committee



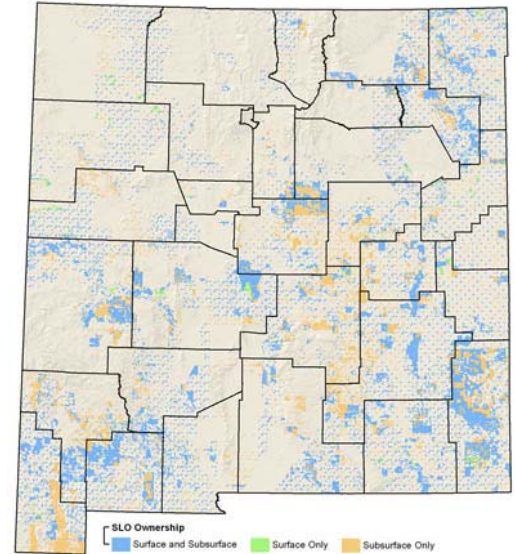
**STATE TRUST LAND MANAGEMENT
NEW MEXICO STATE LAND OFFICE**
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery

The New Mexico State Land Office is responsible for managing the State of New Mexico's trust lands, which consist of approximately nine million acres of surface estate and thirteen million acres of subsurface rights. The trust is an important source of revenue to the state. In 2001, this amounted to \$322 million. Over the last 20 years, the trust has generated nearly \$12 billion. These revenues benefit New Mexico's schools and other public institutions. Revenues are derived from a number of sources, including the leasing of trust lands for grazing and other agricultural activities, minerals extraction, rights-of-way, commercial development, and oil and gas exploration. The majority of revenues derive from royalties paid to the state for oil and gas production.

The trust constitutes an extraordinarily rich legacy to future generations of New Mexicans. It is, and will continue to be, an important source of revenue to the state. In addition, the trust is a reflection of New Mexico's great diversity in landscape and culture. Trust lands are home to critical biological resources, threatened and endangered species, and rare riparian and wetland areas. They are also home to priceless and irreplaceable cultural resources. Therefore, it is incumbent on the State Land Office to protect and preserve these lands and the resources found there, and in truth, we know quite little about the nature and status of these resources.

Color infrared imagery of the scale and resolution proposed can provide us an important tool to better assess and inventory state trust lands and the resources found there. It would give us a means to more quickly evaluate range conditions over larger areas, and give us information critical to working with ranchers in planning and implementing sound management practices. It would enable us to delineate wetlands and riparian areas, as well as other areas of the trust critical to biological diversity, and to thereby work with our stewardship partners and better protect such areas. It would also enable us, and our sister agencies, to identify and prioritize for mitigation those trust lands near New Mexico's communities that are vulnerable to wildfires.

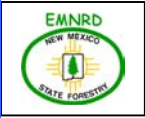
In addition, imagery can be used to detect improvements to the land, such as structures, fencing, and livestock watering systems, made by our lessees. Such improvements can materially affect leasing practices and income. Similarly, imagery may assist us in detecting trespasses to trust lands, and enable us to seek redress, as appropriate, for such trespasses.





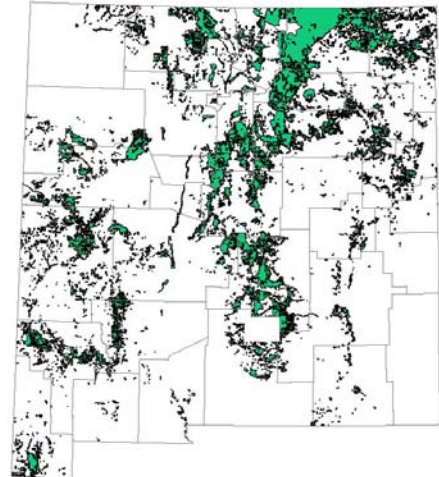
FORESTRY

New Mexico Energy Mineral and Natural Resources Department Statewide Spatial Data Acquisition Requirement Color Infrared Aerial Imagery



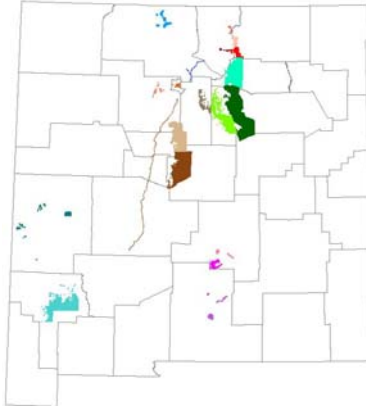
New Mexico EMNRD Forestry has statutory responsibility for fire suppression on all non-federal and non-municipal lands, including nine million acres of woodland and forest. Fire knows no boundary, we must also be concerned with fires that begin on federal lands and spread to state or private land.

A vast majority of the woodland and forest lands in New Mexico are overcrowded with more live trees than is healthy for the ecosystems. Stressed and dying trees mixed with underbrush and in many places, homes. All of it is fuel ready to burn as the recent fire seasons have shown. May 2000 and the Cerro Grande Fire was a wakeup call to communities in New Mexico that it can happen here, not just California.



over
so

State or private wooded/forested lands.



20 Most Vulnerable

The vast task of where to begin to protect our communities became the 20 Most Vulnerable Communities. The National Fire Plan published in the fall of 2000 targeted these communities for assistance. A quick estimate of acres needing treated to reduce the risk of catastrophic fires around these communities brought 1.8 million acres to the forefront.

Color infrared aerial imagery (CIR) of all woodland and forested areas of the state would be used to get the actual acres of heavy fuel loading on susceptible slopes and draws feeding into the communities that need treated enabling us to focus limited time and dollars to treat priority areas. March 2002 started fire season off with fires in two of the most vulnerable communities. Six other

fires during the season threatened four of the other communities, and three fires threatened communities not on the list. We're running out of time to protect lives and property to the fullest extent with our current set of data and limited personnel. Color IR with one meter resolution and 1-2 pixel accuracies will give us the data needed to narrow down the acres around all of the 122 communities in or near woodlands and forests needing field reconnaissance, allowing the focus to be ground treatments, where every trunk and limb removed gives us a new or growing buffer of protection. Panchromatic DOQ images add another dimension to the analysis, but are not available over large portions of wooded and forested areas (Catron, Colfax, Mora, San Miguel and Union Counties).



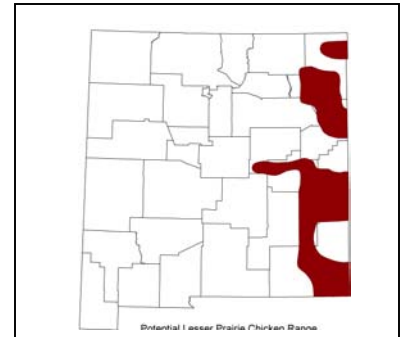
Coordination Committee



NEW MEXICO DEPARTMENT OF GAME AND FISH
Conservation Services Division
Energy Minerals and Natural Resources Department
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery

New Mexico Game and Fish has responsibility over the fish and wildlife resources of the State. The agency manages not only game fish and wildlife, but non-game species as well. Some non-game species are listed under New Mexico's Wildlife Conservation Act. Eighty (80%) percent of state-protected species are listed because of habitat loss or alteration.

Habitat conservation is frequently a critical component in the conservation and recovery of state-protected species. As an example, the sand dune lizard only occupies shinnery oak - sand dune areas. Chemical control of shinnery oak, and oil and gas extraction are threats to sand dune lizard habitat. Lesser prairie chickens occupy shinnery oak - bunchgrass habitats in Eastern New Mexico. Oil and gas extraction and conversion of native habitat to agriculture are major threats to this species. Jaguars prefer remote areas associated with water that contain abundant prey. Efforts are currently underway, in cooperation with Arizona Fish and Game and other agencies, to develop a conservation strategy for jaguars. A host of other state-protected species are under similar circumstances.



New Mexico Game and Fish does not want further declines of these and other protected species. Continued declines could lead to federal listing under the Endangered Species Act. Federal listing frequently leads to restricted land management activities, litigation, and controversy.



Color infrared imagery will help develop accurate habitat maps for a variety of species and therefore help in the conservation and recovery of state-protected species. Habitat maps can identify critical recovery areas, additional areas not previously considered as habitat, and potential re-introduction sites.

Habitat mapping using color infrared imagery would also provide benefits to game species. Color infrared imagery will be used to identify suitable re-introduction sites for wild turkey. Quality color infrared imagery will identify potential habitat improvement projects that benefit deer, elk, and other game species.

Color infrared imagery will be a helpful tool in the conservation and management of New Mexico's fish and wildlife resources.



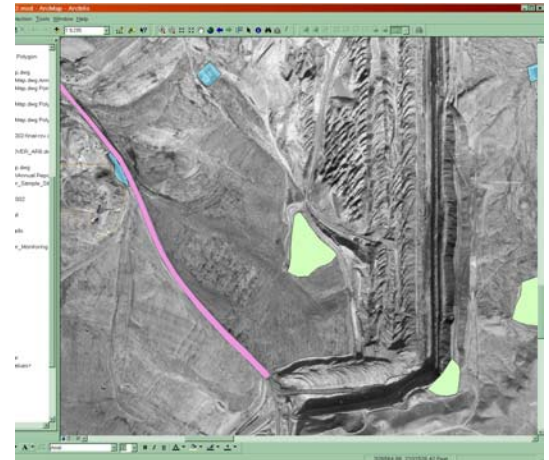
Coordination Committee



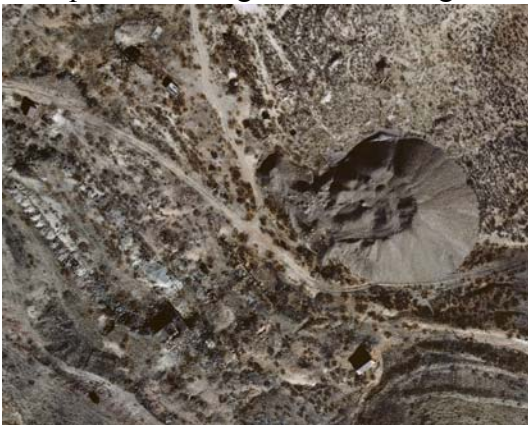
MINING & MINERALS DIVISION
Energy, Minerals & Natural Resources Department
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery

The Mining & Minerals Division (MMD) is responsible for regulating both coal and hard rock mining, and for safeguarding inactive and/or abandoned mines within New Mexico. Our programs are statewide in scope, and yet we have no ready and reliable source of comprehensive, high-resolution imagery.

MMD uses a variety of federal and locally acquired imagery products (5 meter and 1 meter panchromatic orthophotos, aerial photography, LANDSAT scenes, and LiDAR), topography, digital quadrangle maps (DRG), and a wealth of vector-based datasets to characterize the earth's surface, monitor mining operations, and maintain inventories of mine features. Geographic Information System (GIS), Image Processing, and Internet Map Services software applications are used on a daily basis in support of MMD's activities.



MMD's Coal Mine Reclamation and Mining Act Reclamation Programs need statewide color infrared (CIR) orthophoto coverages for assessing the environmental impacts of mining, both past and present. The Programs are responsible for permitting new mining activity, compliance monitoring of existing mining permits, and ensuring that operations are properly reclaimed. One meter CIR orthophotos would provide excellent records of pre-mining conditions in potential resource areas, as well as documentation of current operations. The CIR imagery would allow MMD mining regulatory programs to assess surface disturbances, calculate reclamation success, characterize soils and vegetation type, and search for problem areas based on CIR image classifications. The currently available panchromatic DOQQ imagery, while providing good detail, is out-of-date and of inconsistent quality.



The MMD Abandoned Mine Land and Mine Registration / Safeguarding Programs need 1 meter CIR imagery to perform image classifications to determine the presence and nature of surface disturbances (such as mine waste piles, borrow pits and dumps), track active / inactive / abandoned mines, and develop inventories of abandoned mine features which endanger public health and safety.

Contact: Rick Koehler, GIS Manager, EMNRD MMD

(505) 476-3417

rkoehler@state.nm.us



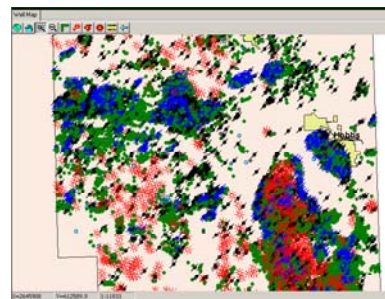
Coordination Committee



NEW MEXICO OIL CONSERVATION DIVISION
Energy, Minerals and Natural Resources Department
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery

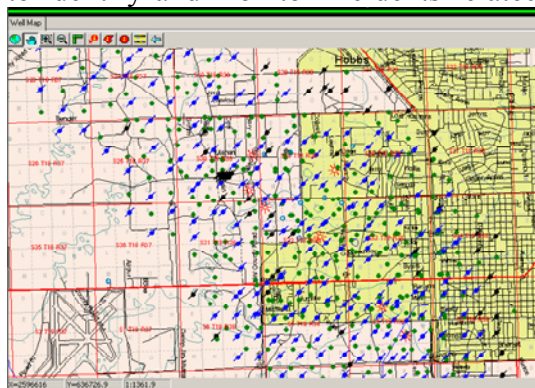
New Mexico Oil Conservation Division (NMOCD) is responsible for regulation of the oil and gas industry in New Mexico. Specifically, it is charged with the prevention of waste, protection of correlative rights and the protection of underground sources of drinking water.

The division maintains three district offices in Hobbs, Artesia and Aztec from which field activities are conducted. Numerous field inspectors from the three offices spend much of their time conducting well and facility inspections and witnessing tests to ensure mechanical integrity of the wells.



*Oil, gas and water-injection wells
in central Lea County, New Mexico.*

Over the last several years, the Environmental Bureau of the NMOCD has had an ever-increasing responsibility to identify and monitor incidents related to spills resulting in potential contamination of groundwater. More frequently, the Bureau receives information by various means on old pits, pipeline leaks, spills and other potential sources of contamination.



*75 years of oil & gas activity in and around Hobbs have
resulted in numerous wells, facilities, pits and spills.*

In 1998, several old, abandoned unlined pits were discovered underlying a residential subdivision on the west side of Hobbs. A routine remediation of an old pit site by the current operating company, revealed the situation and was brought to the attention of the NMOCD. An investigation ensued resulting in a more formal remediation process including continuous monitoring of the effort by Bureau inspectors and other staff. The remediation process will continue for years. Contamination from the pits resulted in total petroleum hydrocarbon (TPH) contamination of the soil, which far

exceeded acceptable levels, as well as some phase-separate hydrocarbon and benzene contamination of the groundwater. Both situations have the potential for public health risks, particularly for area residents.

As has been demonstrated in other parts of the country, the availability of color infrared imagery for similar situations has proven invaluable. Using this technology, the NMOCD would have the ability to accurately determine the extent of an oil or other hazardous chemical spill, and the resulting contamination plume far beyond current capabilities. Additionally, the possibility of identifying particular chemical constituents using spectrum signature would enable NMOCD staff to prioritize its responses and better manage all of its resources.



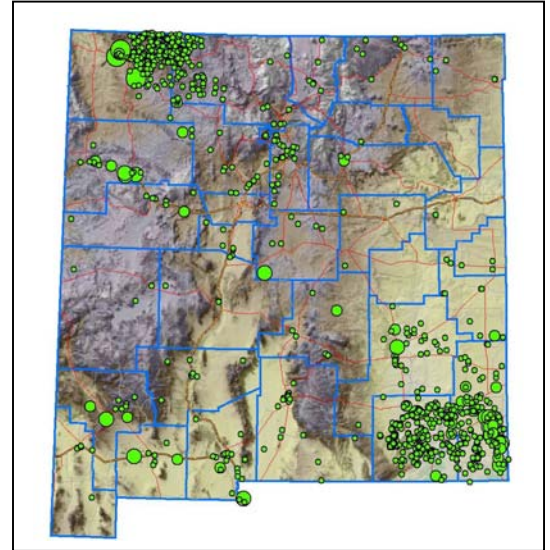
Coordination Committee



ENVIRONMENT
New Mexico Environment Department
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery

The New Mexico Environment Department's mission is to provide the highest quality of life throughout the state by promoting a safe, clean, and productive environment. The State has entrusted the Department with a broad mandate that covers many types of human interaction with the environment. For example, NMED is responsible for the regulation of air contaminants, the improvement of surface water quality, the protection of ground and drinking water, the regulation of solid and hazardous waste and the storage of petroleum products.

Much the Department's work involves technical analysis of environmental parameters. The use of aerial photography data sets will, therefore, help us fulfill our mission. Current and accurate geographic data are integral to effective management of our environmental resources in New Mexico.



The Environment Department will be able to use high-resolution color infrared imagery for the following specific purposes in order to further our mission of protecting the State's air, land and water:

- Identify areas of illegal dumping and correlate this information with water quality threats
- Determine the extent of contamination areas
- Efficiently gather and correct location information of a variety of regulated sources. These include:
 - Permitted remote air emissions sources needed for dispersion modeling analyses
 - Permitted wastewater treatment lagoons and facilities
 - Suspected un-permitted facilities in remote areas
 - Regulated landfills within New Mexico
- Assess grazing, drainage stabilization, riparian vegetation vigor, and Best Management Practices for stream restoration projects
- Proximity analyses of manmade objects to leaking petroleum storage tanks to assist remediation assessments
- Evaluate riparian areas with historical data for change determination

For questions regarding the Environment Department's Imagery needs, please contact Michael Mariano, the GIS Steering Committee chair, at (505) 827-2242 or michael_mariano@nmenv.state.nm.us



Coordination Committee

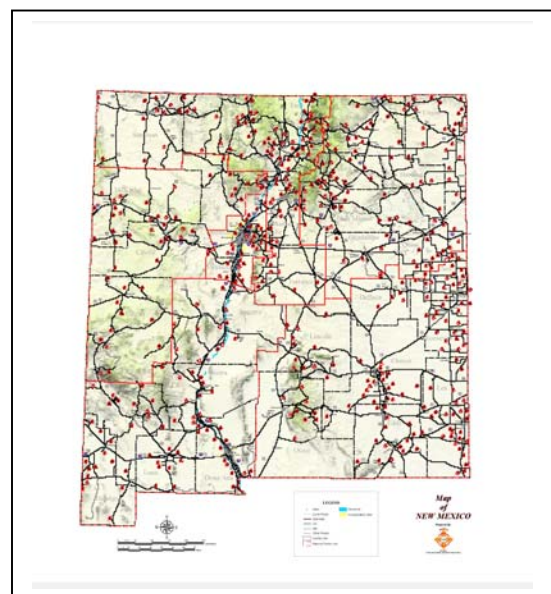
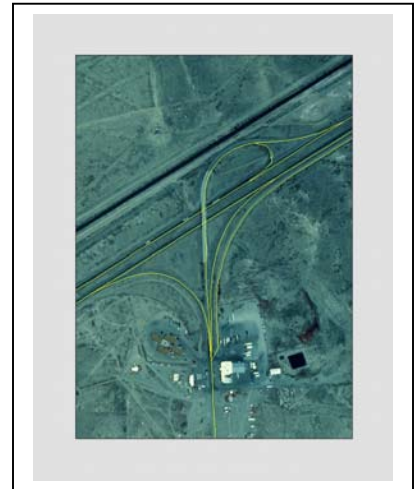


HIGHWAY AND TRANSPORTATION State of New Mexico Statewide Spatial Data Acquisition Requirement Color Infrared Aerial Imagery

The New Mexico State Highway & Transportation Department is responsible for managing and maintaining 11,414 centerline miles of state and federal roads in the state of New Mexico. This represents 27,346 lane miles. This oversight function involves the planning, design, and ongoing maintenance of this road system.

A statewide set of color infrared imagery has the potential for assisting in many of the business activities of the agency. Such activities include:

- The identification and planning of future transportation corridors.
- The evaluation of existing corridors.
- Developing land use models for transportation modeling.
- Supporting the highway design process.
- The management and identification of roadway features.
- Assisting in the identification of critical habitat and wetlands impacted by highway construction.
- Providing a basis for updating and improving the accuracy of our base, spatial road network.
- Responding to transportation system safety, hazard, and disaster assessment and mitigation as a part of the National Consortium on Remote Sensing in Transportation – Disaster Assessment, Safety & Hazards (www.ncrst.org).



GDACC: The Geospatial Data Acquisition Coordination Committee (GDACC) was created by Governor Bill Richardson with Executive Order No. 2003-018. The responsibilities and authority of the GDACC are to coordinate and leverage funding requests and projects requiring geospatial data for the State of New Mexico. In doing so the committee must incorporate the needs of professional organizations to assess, prioritize, and generate scopes of work for data acquisition services. In addition, the GDACC will identify potential funding sources, represent New Mexico mapping priorities and requirements at federal and state levels, and seek the support of New Mexico's Congressional delegation regarding the state's geospatial data needs.



*New Mexico Geospatial Data Acquisition
Coordination Committee*

**REGIONAL DEVELOPMENT CORPORATION
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery**

The RDC is the federally designated North Central New Mexico Community Reuse Organization (CRO) and its mission is to strengthen Northern New Mexico's business community and stimulate economic diversification. The RDC developed a GIS-based interactive website to respond to existing business needs and attract new businesses to the Northern New Mexico counties of Los Alamos, Santa Fe and Rio Arriba.

The website, www.NMBizSites.com, employs GIS technology that results in a dynamic and real-time regional repository of data sought by entrepreneurs, existing businesses or grant writers. This 'one-stop-shop', accessible via any web browser, lets users view available commercial sites for development and turnkey locations in addition to square-footage information, rental rates or sale prices, development incentives, and contact information. For each listing and physical address, corresponding social and economic data such as consumer spending, average age, and household income is available and specialized reports are printable.



The www.NMBizSites.com site is the first of its kind in New Mexico and what sets this project apart from others is its use of GIS data and most specifically the use of digital ortho imagery. The Regional Development Corporation knows first hand the importance of obtaining and distributing current and accurate GIS information. For example, and during the development of this dynamic website, it was found, that only Los Alamos County, had its commercial property mapped on an existing GIS system. Because, Rio Arriba and Santa Fe Counties had incomplete or incompatible data in their GIS databases, the RDC incurred the cost to integrate two different systems into one operation.

The RDC supports the efforts of the GIS Advisory Committee (GISAC) to coordinate and standardize spatial data collection methodologies and requirements within the State of New Mexico. There is an immediate need to obtain digital ortho imagery and in particular color infrared to support a large number of economic development programs. The use of this imagery will enhance our website services and support future RDC activities.

Benefits of acquisition of current imagery are:

- Capacity for the RDC to include other New Mexico counties
- Assurance of the maintenance and efficacy of this economic development initiative
- Availability of imagery for regional corridor transportation and infrastructure planning
- Enhance the integration of GIS resources within New Mexico
- Standardization and implementation of a state-wide GIS program that provides an opportunity to align many interests to benefit the entire state collectively



Coordination Committee

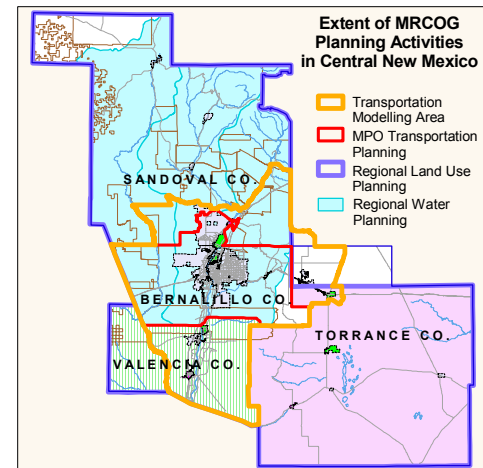


MID-REGION COUNCIL OF GOVERNMENTS **Statewide Spatial Data Acquisition Requirement** Color Infrared Aerial Imagery

The Mid-Region Council of Governments is comprised of four counties, seventeen municipalities and six special purpose governments in central New Mexico. A multi-disciplinary staff at MRCOG provides regional and local planning services to member governments including: 1) regional water planning; 2) transportation and air quality planning and travel forecasting; 3) comprehensive and land use planning; 4) socioeconomic data and forecasting; and, 5) economic development services.

Regional color infrared DOQQs would support and enhance many of the activities of the MRCOG. Benefits of the DOQQs include:

- Maintaining MRCOG's regional digital existing land use data used as input to the **Land Use Analysis (LAM) model**
- Providing currency data to build transportation networks and to **calibrate regional transportation and multi-modal accessibility models**
- Providing imagery for **transportation corridor planning** by MRCOG, New Mexico State Highway and Transportation Department, and local governments
- Identifying developed and irrigated lands to support **water demand studies** and track temporal changes in land uses affecting water supply and demand
- Providing seamless regional imagery at a resolution suitable for **conducting comprehensive plans** at the county or local level
- Supporting our member agencies who are directly responsible for **water, drainage and natural resource management**
- Providing imagery to local governments with limited resources to **"jump start" a GIT program**. MRCOG supports local governments with GIT assistance and training.
- Providing a consistent statewide imagery database accommodating the creation of new data themes at the local or regional level (such as for regional water planning) which then can be **integrated into state-wide data themes**
- **Base mapping** for roads, drainage, land use, and land cover in rural areas
- Maintaining and **improving accuracy of digital E-911 rural addressing and county assessment data** acquired under recent state initiatives. These county-wide databases are important for regional planning.





Coordination Committee

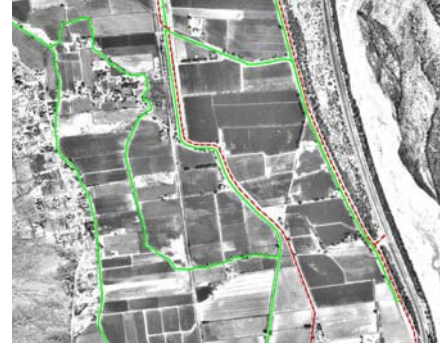


MIDDLE RIO GRANDE CONSERVANCY DISTRICT

Statewide Spatial Data Acquisition Requirement

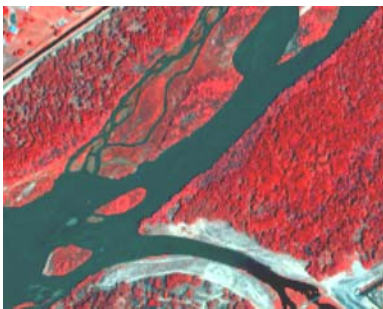
Color Aerial Imagery

The Middle Rio Grande Conservancy District (MRGCD) was created in 1925 as a political subdivision of the state to provide river flood control, drainage, and irrigation water to the middle Rio Grande valley. Today, the MRGCD extends from Cochiti Dam south for approximately 150 miles to the northern boundary of the Bosque del Apache National Wildlife Refuge, encompassing approximately 278,000 acres in four counties. MRGCD owns and manages El Vado storage dam on the Chama River, three diversion dams on the Rio Grande, 834 miles of canals and ditches, and 404 miles of riverside drains that are capable of delivering water for irrigation and removing excess and subsurface drainage.



Currently, the MRGCD is using the existing Digital Ortho Quarter Quadrangles (DOQQ) for a variety of projects, including facility mapping, Bosque (riparian forest) restoration activities and digital parcel mapping. These DOQQ's are the only consistent image dataset at a high enough resolution (1-meter) that covers the entire area of the MRGCD and allows for the relatively high degree of accuracy needed for digital mapping. In two counties, Sandoval and Socorro, the DOQQ's are the only ortho-rectified images that exist, and thus these DOQQ's are vital and are being used for MRGCD's tax parcel delineation. These DOQQ's, however, are between four and six years old, they are black and white – not lending themselves well to current Bosque mapping projects, and they do not show current land divisions or land status.

The only color infrared-red imagery of the entire MRGCD is the District's IKONOS dataset. However, this dataset is not an ortho-rectified product and its pixel resolution is 4-meters. Thus, this dataset cannot and is not used in current mapping projects requiring a high degree of accuracy, and virtually all of MRGCD's projects require a high degree of accuracy. These projects demand that we find a better image dataset for these MRGCD projects.



In summary, the MRGCD would very much like to lend its support in the collection of 1-meter color infrared-red imagery for the state of New Mexico. Distinguishing between the vegetation communities of the Bosque and the surrounding areas is of utmost importance. This acquisition will satisfy the demand for high-resolution accurate base mapping that allows for vegetation mapping as well as an updated base for continued parcel mapping.

Contact: Doug Strech – GIS Coordinator, MRGCD (505) 247-0234 dstrech@mrgcd.dst.nm.us



Coordination Committee



WATER RESOURCES RESEARCH INSTITUTE
New Mexico State University
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery

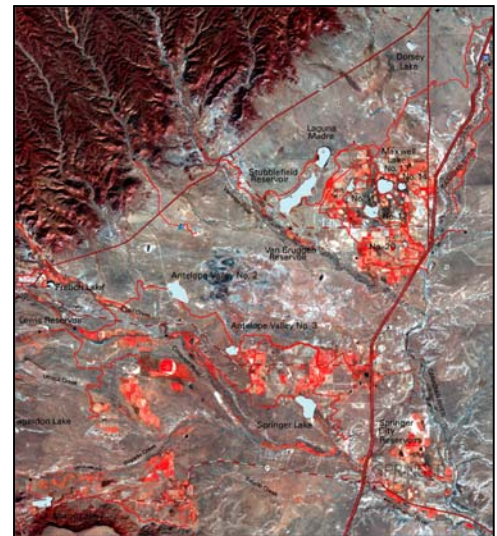
The New Mexico Water Resources Research Institute (NMWRRI), authorized by the 1964 Water Resources Act, was formed in 1963 and was one of the first institutes approved in the United States. The NMWRRI, one of 54 institutes/centers in the U.S and possessions is a member of the National Institutes for Water Resources and the Powell Consortium. The institute is located in Stucky Hall on the New Mexico State University campus.

The mission of the WRRRI is to develop and disseminate knowledge that will assist the state and nation in solving water problems. Through the funding of research and demonstration projects, the institute utilizes the knowledge and experience of researchers throughout the state to solve New Mexico's pressing water problems. Numerous faculty and students within the departmental structure of each New Mexico university campus conduct research that is funded by NMWRRI. Results of NMWRRI funded research is published through the institute publication series or submitted to professional journals and conference proceedings. In-house staff administers the institute's programs, conducts special research projects, and produces variety of issue reports.

The Geographic Information System (GIS) lab at NMWRRI was created in the early 1990's to facilitate funded research that required map products and or spatial analysis as a core component of the research. The GIS lab currently uses imagery in a variety of forms to create map products for the New Mexico Interstate Stream Commission funded regional water plans, Environmental Protection Agency funded border aquifer and hydrogeologic investigations, watershed delineation and characterization, and the updating of basemap hydrography.

Color IR imagery will assist the GIS lab in improving regional water plan mapping products, assist in improving the resolution of hydrogeologic maps used in hydrology modeling of scarce groundwater resources, help investigate watershed improvement and protection, and continue the archival of surface water features for the state.

Access to a relevant, spatial and temporal, statewide imagery data set will provide a valuable tool in the assessment of water resources of the state. Especially, in areas that currently having limited coverage or absent all together. In addition to using color IR within application developed by the GIS lab, this imagery is an invaluable tool for public outreach functions, including the annual NMWRRI Water Conference.





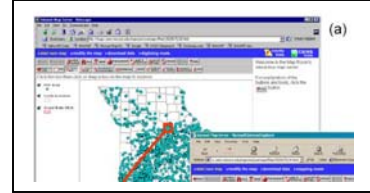
Coordination Committee

LABORATORY FOR ENVIRONMENTAL SPATIAL ANALYSIS



Institute of Natural Resource Analysis and Management Statewide Spatial Data Acquisition Requirement Color Infrared Aerial Imagery

The Laboratory of Environmental Spatial Analysis (LESA) is a multi-disciplinary research component in the Institute of Natural Resources Analysis and Management (INRAM) program and plays a central role in the effective integration, management, analysis of environmental data on biodiversity, hydrology, biochemistry, land management. The task necessitates the development of an integrated, statewide-accessible, well-equipped laboratory for spatial analysis for Mexico. LESA integrates assessment and measurement technologies with climatic, biological, and ecological process studies to quantify the dynamic responses of large ecosystems to natural and human intervention.



and
and

New
basic

In addition to commitment to the INRAM program, LESA synthesizes useful, high-quality data products from many information sources, including federal agencies and the national laboratories. It provides innovative, state-of-the-art monitoring of the environment using geospatial technologies (GIS, GPS and Remote Sensing). The LESA research and outreach staff conducts studies in arid land desertification monitoring and modeling, forest biometrics and wildland fire management, ecosystem dynamics for environmental and sustainable production management, and watershed modeling. By applying scientific knowledge in the physical and biological sciences, LESA can provide advice, guidelines, and tools to address a wide variety of resource management issues.

The facility is located at New Mexico State University where an environment is established for faculty, students, and visiting scholars to creatively interact, flourish, and contribute to solving complex, interdisciplinary problems. Personnel associated with LESA train and assist scientists interested in incorporating spatial analyses into their work. The laboratory promotes statewide cooperation, data sharing, and integrated decision-making to facilitate the ability of the New Mexico research community to acquire outside funding.

Acquisition of current, high-resolution, CIR aerial photography in a DOQQ format would be a highly useful dataset for many of LESA's current and proposed research projects. Specific application areas that would benefit include:

- Geomorphic and landform mapping
- Vegetation mapping (especially riparian zones) and map validation
- Epidemiology and public health studies (e.g., potential mosquito habitat delineation)
- Forest assessment and restoration
- Watershed vulnerability assessment and hydrological modeling
- Land use/land cover change and management



Coordination Committee



NEW MEXICO NATURAL HERITAGE PROGRAM
University of New Mexico
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery

The New Mexico Natural Heritage Program (NMNHP) is a member of the Museum of Southwest Biology, University of New Mexico Biology Department. NMNHP systematically collects, maintains and disseminates information on the rare and endangered plants, animals and plant communities of New Mexico. We also engage in basic research, student training, and public and private partnerships to provide a diversity of high-quality, objective information on the biodiversity and ecology of New Mexico.



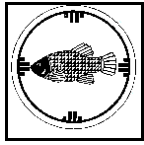
100% of our funded work is in support of federal and state agencies in New Mexico that include: the Department of Defense, the Department of Agriculture, the New Mexico National Guard, and the New Mexico State Game and Fish Department. Each of these agencies has jurisdiction over large tracts of land in New Mexico. To comply with federal and state mandates such as the Endangered Species Act and Clean Water Act, the agencies must have access to the current status of biological information on their lands. NMNHP has the expertise to interpret and provide biological information for these land managers. One of our most important tools is using GIS and remote sensing techniques to identify ecosystem components and provide land managers with information to comply with federal mandates. Essential to this process is data provided by color IR imagery.

We have used color IR imagery to model and map fire potential on military lands in support of military preparedness. Imagery that is interpreted by the NMNHP is used by military testers and trainers to prevent uncontrolled wildfires while providing information on areas for safe and realistic training. Additional land stewardship issues include habitat modeling for state and federally listed species. Again, to remain in compliance with federal mandates and state policies, high-resolution color IR imagery is essential to more rapidly identify boundaries for critical habitat for endangered and threatened species.

Color IR imagery is also used to help determine the geographic extent of species to help federal and state agencies assess the need for listing status. We were able to help the New Mexico state working group on black-tailed prairie dogs determine the current status of this species in New Mexico. Having this type of data available on a statewide basis is crucial in accurately determining listing status of a species for the state. Listing status issues affect all federal and state land managers, therefore data that meets established standards can be used cost effectively, saving agencies and thereby taxpayers increasingly limited funds.



Coordination Committee



DIVISION OF FISHES
Museum of Southwestern Biology
University of New Mexico
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery

The Division of Fishes is part of the Museum of Southwestern Biology within the University of New Mexico Biology Department. Personnel associated with the Division conduct research in evolutionary ecology, ecological and biogeographic determinants of population structure, and molecular systematics. The mission of the MSB Division of Fishes is to document the ichthyofaunal history of the State of New Mexico and the American Southwest.



The long-term goal of the MSB Division of Fishes is to maintain, in perpetuity, the collection of fishes and supporting documents by using sound curatorial techniques and archiving the collections in optimal storage conditions. We strive to ensure that these collections and their associated ecological and geographic data will be available to future generations of ichthyologists and members of the scientific community.

Goals of the MSB Division of Fishes are to encourage and foster UNM student and faculty research in ichthyology or museum studies; provide assistance to other researchers interested in the fish ecology of New Mexico the U.S. southwest; and provide information on New Mexico fishes to the public.

Funding is provided through cooperative Federal and State sources and include the U.S. Bureau of Reclamation, U.S. Army Corps of Engineers, New Mexico Department of Game and Fish, and U.S. Fish and Wildlife Service. These agencies are responsible for water operations in the major New Mexico drainages and their impact on the state's aquatic fauna, many of which are federally listed endangered species. Through careful site selection and characterization using spatial or map analytic tools and data including aerial imagery, we are able to provide comprehensive, consistent, long-term ecological monitoring biogeographic (genetic) analyses of endangered or threatened species. Some of these species include the Rio Grande silvery minnow, Gila trout, Colorado pikeminnow, and razorback sucker.

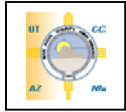


Due to the highly dynamic nature of aquatic systems, a high-resolution, up-to-date base map is essential to site selection, characterization, and monitoring. Additionally, comparisons between historical and present-day river morphologies can provide a wealth of information about environmental impacts such as habitat availability on fish populations.

The MSB Division of Fishes would greatly benefit from the acquisition and rapid dissemination of CIR (color infrared) aerial imagery. These data will be used as base map layers for a number of identified projects involving the management of some of the most sensitive species in New Mexico.



Coordination Committee



SAN JUAN COUNTY

Statewide Spatial Data Acquisition Requirement

Color Aerial Imagery

San Juan County supports the acquisition and distribution of current and accurate geographic data including cadastral, topographic, and orthophotography imagery. With much of New Mexico under federal stewardship, a partnership between the state and federal governments for the collection of these is important for success.

Benefits to San Juan County in a cooperative acquisition of aerial imagery include:

- Supporting the creation of an accurate property mapping system
- Verifying house locations submitted to the Communications Department for E911 emergency response
- Investigation of Crime Scene
- Redistricting of electoral boundaries
- Identifying hydrology problems during road construction design
- Assisting emergency services incident mapping
- Supporting fire prevention and suppression efforts
- Reconciling water rights information with mapping features
- Base mapping for roads, land use, and drainage
- Determining trespass and land encroachment violations on public and private lands.
- Supporting water resource management
- Assessing property uses and calculating acreages
- Analyzing property structures and infrastructure

The acquisition of aerial imagery for San Juan County is guaranteed to assist all the departments in addition to providing a continuous coverage between other jurisdictions within the county.



data





Coordination Committee



TAOS COUNTY

Statewide Spatial Data Acquisition Requirement

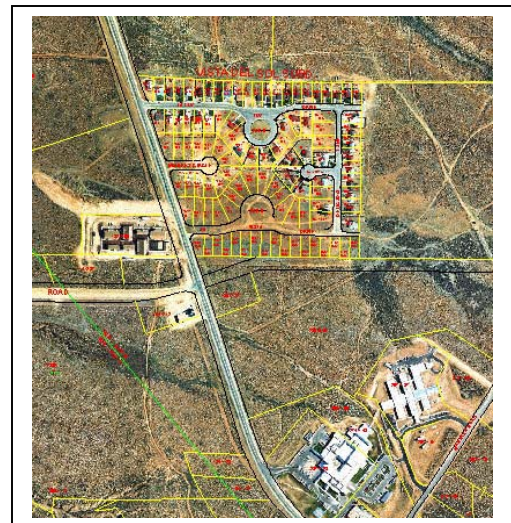
Color Imagery

Taos County is very supportive of the effort to have the acquisition and distribution of ortho imagery. With much of New Mexico under federal stewardship, a partnership between the state and federal governments for the collection of these data is important for success. Taos County has more than 50% of land ownership occupied by Federal entities.

Benefits to Taos County in a cooperative acquisition of aerial imagery include:

- ☐ Supporting the creation of an accurate property mapping system
- ☐ Verifying locations submitted to the Communications Department for E911 emergency response
- ☐ Investing of Crime Scenes
- ☐ Identifying hydrology problems for road construction design
- ☐ Assisting emergency services incident mapping
- ☐ Supporting fire prevention and suppression efforts
- ☐ Reconciling water rights information with mapping features
- ☐ Base mapping for roads, land use, and drainage
- ☐ Determining trespass and land encroachment violations on public and private lands.
- ☐ Supporting water resource management
- ☐ Assessing property uses and calculating acreages
- ☐ Analyzing property structures and infrastructure

The acquisition of aerial imagery for Taos County is guaranteed to assist all the departments in addition to providing a continuous coverage between other jurisdictions within the county.



GDACC: The Geospatial Data Acquisition Coordination Committee (GDACC) was created by Governor Bill Richardson with Executive Order No. 2003-018. The responsibilities and authority of the GDACC are to coordinate and leverage funding requests and projects requiring geospatial data for the State of New Mexico. In doing so the committee must incorporate the needs of professional organizations to assess, prioritize, and generate scopes of work for data acquisition services. In addition, the GDACC will identify potential funding sources, represent New Mexico mapping priorities and requirements at federal and state levels, and seek the support of New Mexico's Congressional delegation regarding the state's geospatial data needs.



Coordination Committee



CITY OF SANTA FE

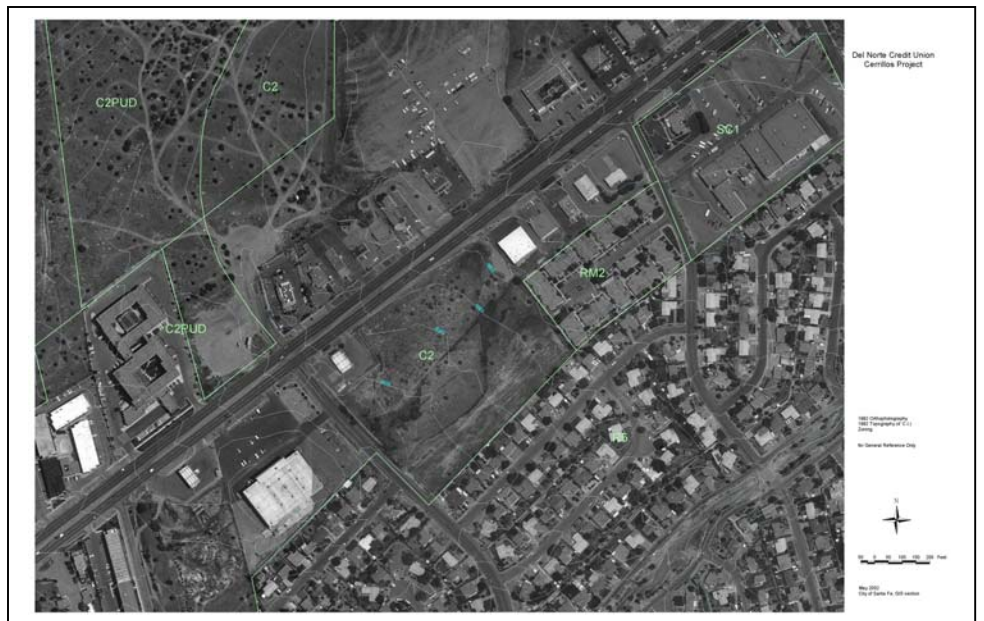
Statewide Spatial Data Acquisition Requirement

Color Infrared Aerial Imagery

The City of Santa Fe uses aerial imagery for the development and maintenance of planimetric base map layers (buildings, roads, drainage, vegetation cover, etc.), to assist in the development of cultural map layers (land ownership parcels, zoning districts, planning areas, etc.), and in series as a record of the physical changes occurring in the City over time (growth and development patterns, historical documentation, environmental assessments). Map layers derived from aerial imagery and other sources are incorporated into the City's Geographic Information System and associated with additional data. Staff members from many Departments use this information in the development and support of various local government functions and projects. Geographic information is also provided to the public for a variety of purposes.

New aerial imagery provides a base for the City to maintain currency in the mapping pursuits listed above and extend the existing series of City aeriels for temporal studies. In addition, by extending the spectral range, color infrared aerial imagery will provide a new dimension of data available to City Staff. Enhanced color and tonal variation will provide the opportunity to improve the identification and classification of land uses, land cover types, and other conditions. These interpretations would assist staff in watershed management, fire planning and prevention in urban/wildland interface areas, integrated pest management, drainage studies, grounds maintenance, and the management of parks and other outdoor recreational areas.

The City of Santa Fe supports the acquisition and distribution of current and accurate geographic data, including cadastral, topographic, and orthophotographic data.





Taos Soil and Water Conservation District (SWCD) strongly advocates the acquisition of aerial Geographic Information System (GIS) data for the State of New Mexico. The District would utilize these data to manage natural resources on private lands within Taos County.

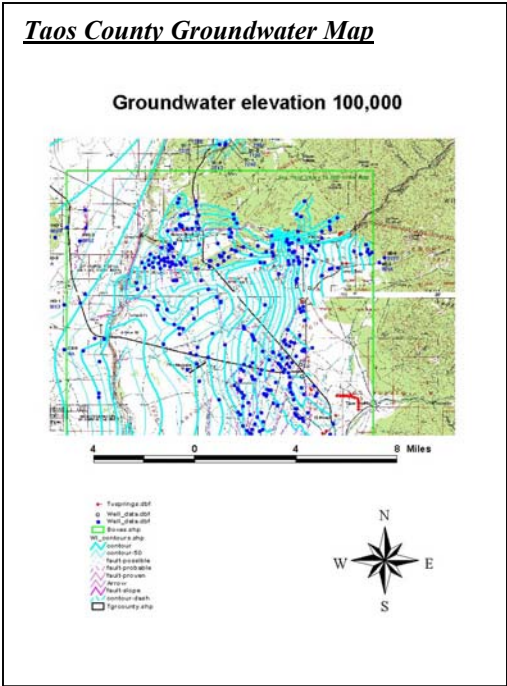
The figure on the right is a Taos County water table map created utilizing GIS technology. The map includes a base layer of USGS topographic maps as a background with water well locations depicted as blue points. Water table contour lines are drawn in light blue and natural springs are shown as red points. What is missing is aerial imagery that will assist SDWC in more accurately locating water wells and other features that support soil and water conservation efforts within Taos.

The map was created to better manage water resources within Taos County and is expected to be a part of the regional water plan currently being planned for Taos County. The supporting data behind this map will provide water users with valuable information on the feasibility of drilling additional water wells by estimating the approximate depth to water and the potential affects pumping may have on surrounding wells.

The acquisition of aerial GIS data will enhance this project and others similar to it in New Mexico. Aerial imagery that includes color infrared will assist the SDWC in identifying and providing solutions for soil erosion control, irrigation efficiencies, weed eradication, and other support services to the community within Taos. Agencies able to tap in to this resource will provide better services to their respective constituents. The general public will benefit from the immense wealth of data that aerial imagery will provide. As everyone will agree, agencies provided the best technology would provide the best services to the taxpayer. Taos SWCD is committed to that type of service for the people of New Mexico.

It is in this regard that Taos Soil and Water Conservation District strongly supports this data acquisition project.

Peter A. Vigil, District Manager - Taos SWCD
P.O. Box 2787
Ranchos de Taos, NM 87557
Phone 505-751-0584 -- Fax 505-751-9253
E-mail tswcd@newmex.com



GDACC: The Geospatial Data Acquisition Coordination Committee (GDACC) was created by Governor Bill Richardson with Executive Order No. 2003-018. The responsibilities and authority of the GDACC are to coordinate and leverage funding requests and projects requiring geospatial data for the State of New Mexico. In doing so the committee must incorporate the needs of professional organizations to assess, prioritize, and generate scopes of work for data acquisition services. In addition, the GDACC will identify potential funding sources, represent New Mexico mapping priorities and requirements at federal and state levels, and seek the support of New Mexico's Congressional delegation regarding the state's geospatial data needs.



Coordination Committee



FOREST SERVICE
U. S. Department of Agriculture
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery

The Southwestern Region is engaged in the initial stages of implementing forest-level resource mapping for spatial and attribute data. Successful implementation of this multi-year project includes mapping applications for natural resources including infrastructure, water, fauna, human dimensions, and lands data. To obtain detailed information on spatial and attribute data for natural resources requires field verification, inventory and the use of imagery.

An orthophoto allows objects to be seen and measured in a visual context with the accuracy of a map. Thus, digital orthophotography (DOQ) is an essential tool in forest-level resource mapping and is used for the 1:24,000 Forest Service national mapping programs including primary base and single edition quadrangle construction. The verification of mapped features is performed using DOQ's as a backdrop in the delineation of roads, fire perimeters and timber stand delineation. In addition, DOQ's are used to verify the alignment of existing GIS digital data and provide relational placement for resource mapping.



The past several years, digital orthophotography have been used during fire season for delineating the extent of fire damage and location depiction of home and structure loss.

Current, accurate DOQ's are essential data for virtually all GIS applications as they are used as a primary source of data acquisition or a visual background for the display of data.

Digital orthophotography are considered one of the seven Federal Geographic Data Committee Framework data layers and deemed necessary by OMB for completion of the National Spatial Data Infrastructure. These data are of national importance and provide essential capability for generating ancillary information for the public, federal and state agencies. This tool streamlines the collection of consistent and standard products and prepares data for easy input into corporate information databases.

Orthophotography can provide a historical baseline for landscape change that can be measured through the imagery record. Urbanization, population growth and cultural impacts can be monitored and assessed. This imagery is an essential product for both federal and state use and provides a foundation for mapping ecosystems, monitoring watersheds, and creating GIS databases. Without it, we are missing a vital link in preserving and protecting New Mexico resources.



Coordination Committee



BUREAU OF LAND MANAGEMENT
U.S. Department of the Interior
Statewide Spatial Data Acquisition Requirement
Color Infrared Aerial Imagery

The BLM is responsible for almost 13.5 million surface acres in New Mexico. We manage for ‘multiple use’ of many resources such as recreational, archeological & cultural features, oil & gas development, wildlife, cave resources, range & grazing, coal exploration, water resources and threatened & endangered and invasive species, etc. Conflict is inevitable and GIS/remote sensing is an excellent tool to assist in the difficult decision-making that’s often required.

The use of digital imagery by BLM Resource Specialists has more than quadrupled with the acquisition of DOQQs. New roads, range improvements, rights-of-ways, and vegetation delineation are obtained from color-infrared (CIR) DOQQs. Linear vegetation features are of special interest to geologists. Sometimes they indicate geologic features that are important in cave resources and/or oil & gas exploration. CIR DOQQs are the only digital products that provide the quality and resolution necessary for monitoring.

Cadastral also uses DOQQs. They’ve provided a base for registering historical photos of the Rio Grande. Ownership and GPS surveys were overlain and meander changes of the river were mapped.

Changes in the relation of river meanders over time to the surveys could be seen. The DOQQs provided a much more accurate framework for the historical information than any of our other existing sources.

Considering the past 2 years of wildfires, the ongoing drought conditions and the stressed condition of trees this year, we’re anticipating another very busy fire season. Noxious weed infestation is becoming a big problem in



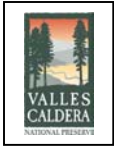
New Mexico and will only get worse with drought conditions. Many parts of the State are experiencing water shortages, never before recorded in New Mexico. CIR imagery is badly needed in order to protect resources, watersheds, lives and property. It will give us an extremely valuable tool to plan and deal with this emergency



be



Coordination Committee



VALLES CALDERA NATIONAL PRESERVE
U.S. Department of Agriculture
Natural or Color IR Aerial Imagery

The Valles Caldera National Preserve, previously called the Baca Ranch, is approximately 89,000 acres of high elevation forest and grasslands located in north central New Mexico. The “Valles Caldera Preservation Act” (P.L.106-248) designated these spectacular lands as a national preserve and outlined how they will be managed. The Act states that the preserve is established to: “...*protect and preserve the scientific, geologic, watershed, fish, wildlife, historic, cultural and recreation values of the Preserve, and to provide for multiple use and sustained yield of renewable resources within the Preserve...*”

Existing spatial information is either limited or not available as the Preserve was privately owned prior to the government’s acquisition in 2000. For example, the Preserve contains over 1,400 miles of road that need to be inventoried and mapped. In addition, vegetation, habitat, fuels, and historical layers require assessment and conversion into digital maps.



The Preserve’s Research, Inventorying, & Monitoring (RIM) program is collecting and assimilating materials to produce many of these map layers. Most of this effort relies on aerial photography captured in 1996 and 2001 coupled with extensive field mapping that will require several years to complete. RIM activities include a combination of survey, inventory, and ultimately mapping of archeological sites, vegetation communities, historical timber activities, geology, soils, animal habitat (amphibian, fish, reptile, bird, and elk), and grazing units. These data will support preserve management operations that will include fire planning, boundary surveys, noxious weed eradication, infrastructure improvements, highway corridor planning, forest fuels reduction, cattle grazing, elk hunting, fishing, hiking, wagon rides, night sky events, and other special recreational events.

These activities require an accurate and current spatial framework to support site assessments, planning analyses, production of maps, and public access to web based mapping. One purpose of the “Valles Caldera Preservation Act” is to “...*establish a demonstration area for an experimental management regime adapted to this unique property, which incorporates elements of public and private administration in order to promote long-term financial sustainability...*”. Aerial imagery as that proposed by the State of New Mexico will provide a current, and accurate base for the Valles Caldera National Preserve to accomplish this purpose. In supporting this request in conjunction with the U.S. Forest Service and the National Parks Service the Preserve together with the adjoining Pueblos will have imagery that is seamless and consistent beyond political boundaries.



*New Mexico Geospatial Data Acquisition
Coordination Committee*

FUNDING REQUEST: Support Letters

Letters of support have been sent to the New Mexico Congressional Delegation requesting funding for the Acquisition of Statewide Digital Aerial Imagery. Excerpts from a selection of these letters are listed below.

Office of the State Engineer

The acquisition of digital imagery is essential to the management of water resources including their assessment and related litigation.

Environment Department

Digital aerial imagery will provide accurate geographic data integral to effective management of New Mexico's environmental resources.

Department of Game and Fish

These data are important in the mapping of suitable habitat, conservation projects, big game enhancement and depredation issues.

State Land Office

These data will support the development of current baseline information important to leases, rights-of-way, land condition and improvements and many other land management issues.

Information Technology Commission

Digital ortho imagery is needed to support a large number of programs in the areas of water, agriculture, ranching, forestry, emergency services, fire suppression and other land-based issues.

Geographic Information System Advisory Committee

The acquisition of digital ortho imagery will improve the capabilities of New Mexico by providing accurate and current land base data essential for the application of modern tools essential for addressing issues now affecting our state.

NM Geographic Information Council

Much of New Mexico is under federal stewardship requiring a partnership between the state, federal and local governments. The acquisition of digital ortho imagery will provide current baseline information to support the water investigations, parcel mapping, emergency response and other programs critical to all management bodies in the state.



New Mexico Geospatial Data Acquisition Coordination Committee

State Perspective: GISAC

OVERSIGHT: IT Commission



Statewide Mapping: Instrument

EXECUTIVE ORDER

Geospatial Data Acquisition
Coordination Committee

Function:

- Coordinate with professionals
- Coordinate funding requests
- Assess and prioritize needs
- Identify funding sources
- Generate scopes for RFI and RFP
- Represent the State
- Seek State and Federal support

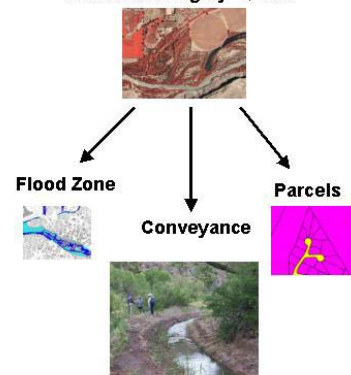
Statewide Mapping: Acequia



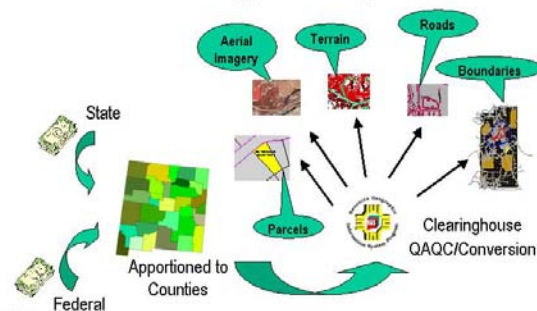
Statewide Mapping: Aerial Imagery



Statewide Imagery - \$4.5M



State: Funding Strategies



State Perspective: Access

